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A NEGLECTED VARIETY OF *HELIANTHUS ATRORUBENS* L.

W. A. ANDERSON

IN August, 1923, Professor F. T. McFarland, of the University of Kentucky, and the writer collected a sunflower in western Kentucky, which they later proposed as a new species, *Helianthus kentuckiensis*.<sup>1</sup> In 1928 the writer revisited the station, and obtained some rootstocks which were planted in his father's garden at La Center, Kentucky, where they have grown and flowered abundantly the past two years.

Upon restudy, this plant has been found to be *Helianthus atrorubens* L., var. *pubescens* O. Ktze,<sup>2</sup> and furthermore it has been found that this variety is the only representative of the species in the Mississippi valley, while *Helianthus atrorubens* proper grows only on the Atlantic coastal plain, and in the mountains of North Carolina, Tennessee and Georgia.

Kuntze's selection of a varietal name for this plant is not a happy one, since the true *H. atrorubens* is conspicuously villous, and his brief diagnosis, "Caulis folia pilis parvis munita," does not give the essential differences between the two plants. Nevertheless, examination of the type specimen, now in the herbarium of the New York Botanical Garden, shows conclusively that Kuntze's varietal name should be applied to this plant of the lower Mississippi valley. The type specimen was collected at Cairo (Illinois) "am Mississippi."<sup>3</sup>

About fifty years previous to Kuntze's publication Nuttall had collected this plant in the plains of Arkansas, recognized its close relationship to *H. atrorubens*, and described it as a new species under

<sup>1</sup> McFarland, F. T. and Anderson, W. A., Jr., Amer. Midl. Naturalist ix. 139 (1924).

<sup>2</sup> Kuntze, O., Rev. Gen. Pl. i. 343 (1891).

<sup>3</sup> Kuntze, O., Rev. Gen. Pl., Vorwort, p. x.



the name *Helianthus silphioides*.<sup>1</sup> Torrey and Gray<sup>2</sup> treated Nuttall's name as synonymous with *H. atrorubens*, which disposition of *H. silphioides* has been followed by all subsequent authors.

Before publishing *Helianthus kentuckiensis* as a new species, Dr. McFarland and the writer sent a specimen of it to Mr. E. E. Watson of East Lansing, Michigan, who was then preparing a monograph of the genus. It was at his suggestion that the plant was described as a new species. Later, when his monograph appeared<sup>3</sup> Watson disposed of *H. kentuckiensis* as "not a *Helianthus*," while he treated *H. silphioides* and *H. atrorubens*, var. *pubescens* as synonyms of *H. atrorubens*. This interpretation is difficult to understand, since the floral characters of *H. kentuckiensis* are identical with those of *H. atrorubens*; and the author must have seen other specimens of *H. atrorubens*, var. *pubescens*, including type material of *Helianthus silphioides*.

Synonymy and descriptions of *Helianthus atrorubens* and its variety *pubescens* are as follows:

HELIANTHUS ATRORUBENS L. *H. sparsifolius* Ell., Sketch Bot. S. C. & Ga. ii. 415 (1824). *H. atrorubens*, var. *normalis* Kuntze, Rev. Gen. Pl. i. 343 (1891). Not *H. gracilis* Bert. Misc. Bot. vii. 41 (1848).<sup>4</sup> 7-12 dm. high from a short, woody rootstock: stem more or less hispid, often nearly glabrous above: leaves always in pairs, *ovate to oblong-lanceolate, acute, tapering or abruptly contracted into a winged petiole*; upper surface scabrous-pubescent; lower surface smoother, with long hairs on the veins and petiole; branches of panicle few, elongate, each bearing one to three heads: involucral bracts in about three rows, obovate-oblong, rounded at the tips, mucronulate, glabrous, ciliate: disk 1-1.5 cm. across: disk-flowers purplish brown; ray-flowers yellow: disk-scales three-toothed at summit: pappus of two scarious, ciliolate, tapering scales: achenes quadrate in cross section, dark purple or speckled with yellow, with a circle of hairs around the top and a few on the angles.

HELIANTHUS ATRORUBENS, var. PUBESCENS Kuntze, Rev. Gen. Pl. i. 343 (1891). *Helianthus silphioides* Nutt. Trans. Amer. Phil. Soc., vii. 366 (1841). *H. atrorubens* in part, Torr. and Gray, Fl. N. Amer. 322 (1842), and subsequent authors. *H. kentuckiensis* McFarland

<sup>1</sup> Nuttall, Thomas, Trans. Amer. Phil. Soc., vii. 366 (1841).

<sup>2</sup> Torrey and Gray, Fl. N. Amer., ii. 322 (1842).

<sup>3</sup> Watson, E. E., Contr. to a Monograph of the Genus *Helianthus*, Papers of the Mich. Acad. Sci. Arts & Let. ix. 343 (1929).

<sup>4</sup> Watson (l. c.) cites this as a synonym of *Helianthus atrorubens*, but Bertoloni's description and plate show that the name applies to some other plant: "Cephalum solitarium, terminale, . . . diametri sesquipollicaris, . . . squamis . . . lanceolatis, . . . externis brevioribus, acutis, internis acuminatis."



and Anderson, Amer. Midl. Nat. ix. 139 (1924). Much stouter than typical *Helianthus atrorubens*, often 2 meters high, very scabrous-pubescent throughout: leaves all opposite or the upper ones alternate; blades as broad as long, truncate or even slightly cordate at base; petiole narrow-winged: flowering heads few, on long naked branches: involucre bracts, scales of the receptacle and flowers similar to those of *H. atrorubens*.

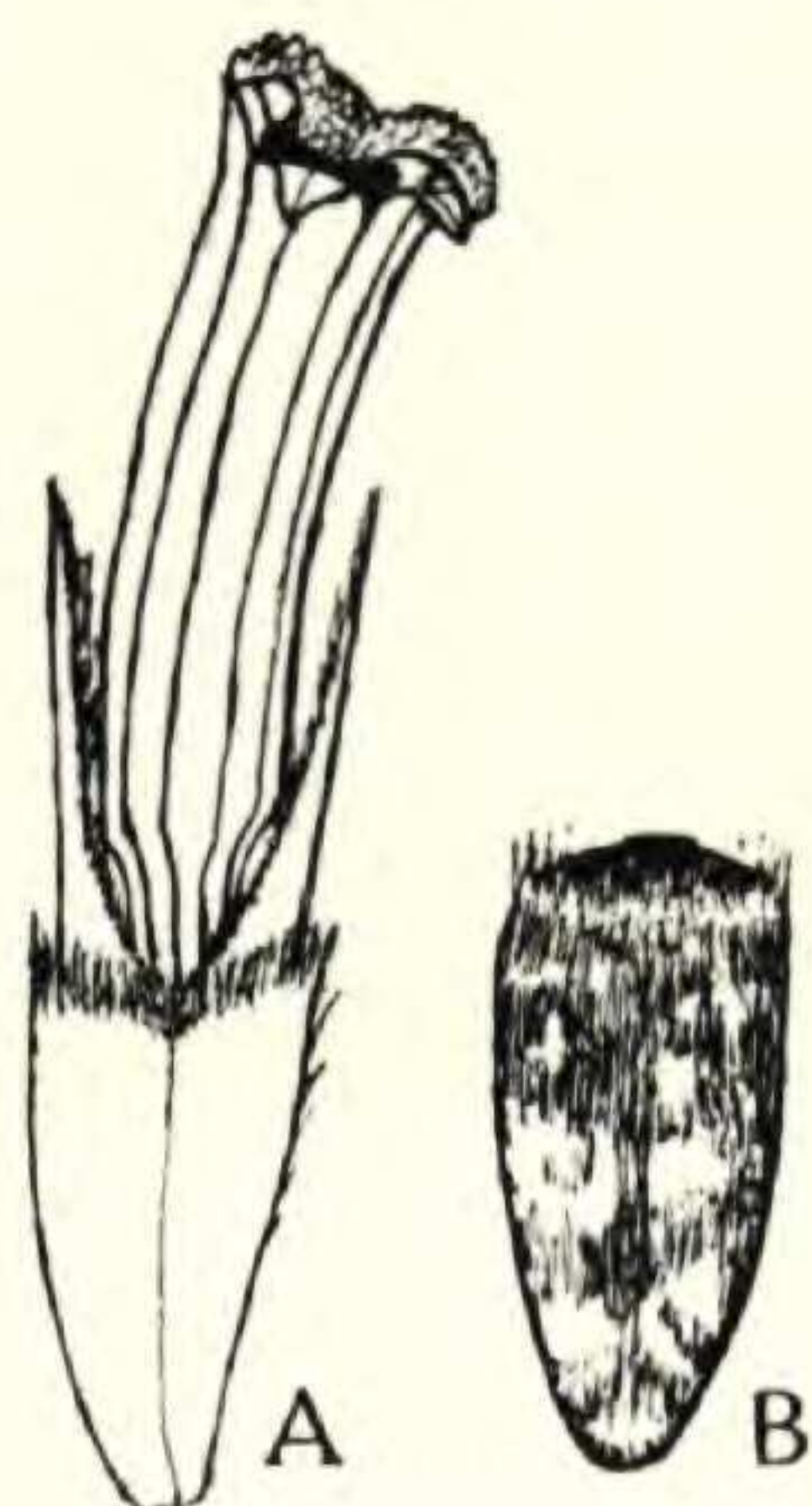


Fig. A. Disk-flower of *HELIANTHUS KENTUCKIENSIS* MacF. & Anderson.  
 Fig. B. Achene from type specimen of *HELIANTHUS SILPHIOIDES* Nutt.

Specimens of *Helianthus atrorubens*, var. *pubescens* which have been examined by the writer are as follows: ILLINOIS: Cairo, *Kuntze*, in 1874 (TYPE). KENTUCKY: Near Clinton, Hickman County, *Anderson*, no. 1041. MISSOURI: Pleasant Grove, *Bush*, no. 304; Dunklin County, *Bush*, no. 72. ARKANSAS: *Nuttall*, fragments of the type of *H. silphoides*. ALABAMA: *Buckley*. LOUISIANA: *Hale*, in 1842.

Material from the type station of *H. kentuckiensis*, McF. and Anderson, collected by the writer and cultivated at La Center, Kentucky has been placed in the Gray Herbarium, and living specimens have been planted in the Harvard Botanical Garden. With the original publication of *H. kentuckiensis* it was stated that a cotype was deposited in "Herbarium Harvard University." There is no such specimen in the Gray Herbarium, so it must have been lost in sending.

As represented by specimens in the Gray Herbarium, true *Helianthus atrorubens* does not extend into the Mississippi valley. Its presence in the mountains of North Carolina, Tennessee, and Georgia, as well as on the Atlantic coastal plain, may be explained on the basis that it has moved out of its ancestral home in the ancient region, now occupied by the southern Appalachian upland, to the present coastal



plain, leaving a few isolated survivors in favorable spots in the mountains.<sup>1</sup> Strains from this ancient stock which spread from the ancient region into the lower Mississippi valley have become modified in foliage, but not in floral characters.

The writer is indebted to Dr. S. F. Blake, who examined his specimen of *Helianthus kentuckiensis*, and suggested its relationship to *H. atrorubens*; and to Dr. Elmer D. Merrill, of the New York Botanical Garden, who generously loaned the type specimen of *H. atrorubens*, var. *pubescens*.

THE STATE UNIVERSITY OF IOWA.

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SOME FIELD NOTES: A NEW VARIETY AND SOME FORMS  
OF PLANTS FROM THE MIDDLE WEST; ALSO TWO  
FORMS FROM MASSACHUSETTS

H. C. BENKE

PURSUING the study of the wild asters in the Chicago Region in the fall of 1929 in continuation from previous years, special attention was given by me to such details as leaf-form, branching habit, association in the field and coloration.

The growing season of the year 1929 in this region seems to have been subject to a most favorable combination of climatic influences resulting in an uncommonly fine development of coloration in plants. And never was there a more gorgeous display of the autumnal tintings in vegetation.

The region about Chicago in a great semi-circle to the north, west and south of some fifty miles, with a twenty-mile tangent southeast into the Valparaiso Moraine in Indiana was revisited and specimens, with field notes, were secured of promising material. Great masses of white, blue and purple were in continued procession—for the genus *Aster* predominates in our late fall landscape. Other specimens, besides asters, were also secured—all in very limited amounts, since only the new or novel was sought.

In early spring a trip to the southwest as far as New Mexico to near the Rio Grande was made, over Kansas and the Panhandle

<sup>1</sup> See Fernald, M. L., Specific Segregations and Identities in some Floras of Eastern North America and the Old World, *RHODORA* xxxiii. 25-63 (1931), also Small, J. K., Altitudinal Distribution of Eastern American *Iris*, *Jour. N. Y. Bot. Gard.* xxxii. 49-66 (1931).